Market-led systems development: when customers become users

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Abstract

Purpose – There has been a great deal of interest in ensuring that organisational strategy is successfully implemented in order to meet business objectives. More recently, reports of the failure of information systems and technology (IS&T) projects have become more regular and the reported failures more spectacular. This has added to a growing perception that IS&T implementation approaches currently utilised are struggling to add value to customers and users, leading to calls for a re-think of how IS&T is introduced into organisations. This paper seeks to develop a customer experience strategy which will give a key group of stakeholders, customers, a major input in the IS&T development process.

Design/methodology/approach – The approach taken to examine IS&T implementation at this stage of the development of this theme is empirical. The failed introduction of a new IS&T system in a major service organisation in the UK is used as a case study. Data were gathered from 22 face-to-face interviews with key stakeholders in the IS&T project.

Findings – The paper finds that the failure was driven by a number of factors, including poor project management and a lack of understanding of how systems can negatively affect organisations and customer relationships. The paper re-emphasises the need to ensure that customer and user perceptions are taken into consideration during any major systems introduction project. An interesting aspect of these systems is that a version is being used today by the organisation.

Research limitations/implications – The customer experience journey (CEJ) framework will be improved by being validated within another organisation.

Practical implications – The paper recognises that, in the future, a clear framework to support the CEJ needs to be well thought out before a major systems introduction project commences. This is increasingly important as many roll-outs are trans-national and involve customers and supply chains.

Originality/value – The paper contributes to work practice relating to customer-driven IS&T service introduction.

Keywords Communication technologies, Project management, Customer orientation

Paper type Research paper

Introduction

The importance of information systems and technology (IS&T) in organisations cannot be over-emphasised. For example, it enables business transformation; supports re-design initiatives and also enables organisations to deliver flexible services in step with constantly changing customer demands. By enabling the re-allocation of resources that supports these initiatives, IS&T can also encourage organisations to participate in new market programmes. This is achieved by better cost control, operational efficiency and market targeting which enables the increase in its knowledge base. However, it is crucial that organisations understand the importance of the implementation journey that impacts on the eventual success, or otherwise, of an IS&T project (Brooke and Maguire, 1998; Maguire, 2000). The introduction of IS&T should be "market-led" when the new system interfaces directly with a firm's customers (Maguire, 2000). Unfortunately, although there is general acceptance of the importance of good user support and involvement in IS&T project success (Cook and Davis, 2003), and also a range of research available on users' experience during large-scale IT/IS implementation (Gales and Mansour-Cole, 1995; Geddes, 1990) to a large extent, the significance of IS&T introductions still remains a grey area. This is especially true in relation to a strategic emphasis and implementation approach. For example, introduction problems have been reported on the largest IS&T project in the world which has been commissioned by the UK's National Health Service Connecting for Health. Systems development in the health services are especially problematical owing to the complex nature of the organisation and the significant number of key stakeholders (Southon et al., 1999; Maguire, 2007). Generally speaking it has been easier to isolate system failure in the public sector, as opposed to the private sector, because of accountability and reporting requirements (Collins and Bicknell, 2000). Academics have been monitoring system failures for many years. They have also been forthcoming in trying to identify why IS&T can lead to dysfunctionality within organisations (Sauer, 1993).

In order to continue to study the issues surrounding IS&T introduction, we see as necessary the development of a research theme which focuses on the experience of users during the service introduction stage of IS&T projects. It is also important to support this study with empirical data which will validate the theme by exploring new approaches. These approaches include establishing relationships between introduction and success criteria. This is especially true as we generally share the view that limitations in the current scope of conventional project management exist. In effect, the decision to progress with the study is based on a realisation that so far, traditional approaches that examine IS&T failures have produced large quantities of literature, that arguably fails to actually reduce the number of IS&T projects which are failing at introduction phase. It is accepted that it is sometimes difficult to attribute success and failure within IS&T projects.

Large organisations should be interested in improving their knowledge and understanding of the complex issues surrounding the management of customer satisfaction. Measuring customer satisfaction identifies ways of improving product/service quality, which in turn leads to increased competitive advantage. Increasing customer satisfaction has become the main focus of many firms to boost repeat business and benefit from positive word-of-mouth, thus increasing long-term profitability. Customer satisfaction research is by far the most popular means of gathering customer feedback. Since, customer tastes and requirements are always changing, a major part of the quality effort must be devoted to market research. This must be an important part of any system development. Organisations must continually gauge customer experiences to ensure that satisfaction is provided.

Why successful IS&T implementation and introduction matters

IS&T as a resource supports the activities organisations carry out as part of their business-as-usual operational activities. It also supports activities that drive business and organisational change. It is however important to note that such initiatives are unable to provide any operational or business value without some form of associated transformation within the organisation itself (Maguire, 2002). This transformation will include changes in the nature of work the organisation conducts, changes in the behaviour of people in the organisation and also changes in supporting operational processes.

IS&T provides for increased competitiveness and flexibility in organisations, although at different degrees of impact. When properly implemented, it will allow the redesign of business processes that enables organisations to introduce operational efficiencies (Santhanan and Hartono, 2003; Bhatt and Grover, 2005). It is however necessary to point out that two points need to be highlighted. In the first place, although there now seems to be no more doubt about the positive contributions of IT related investments, there are substantial variations in the estimates of the corresponding effects within various organisation. Even though IS&T initiatives offer an opportunity for competitive advantage, they can also increase strategic vulnerability (Applegate et al., 1996), meaning that failure at the introduction stage of the systems can be catastrophic as the case of FoxMeyer Drug Corporation highlights (CIO Magazine, 2000; Drug Store News, 1998). At the very least organisations should make every effort to align their information technology and business strategies (Ojiako et al., 2004). There are inherent risks in all IS&T projects and they need to be managed (Maguire, 2002). An integrated framework for managing risks inIS&T developments is required. This should be formulated from the perspective of the IS&T developer.

IS&T introduction management

IS&T introduction involves ensuring that new and changed systems are successfully integrated into an existing technical space or environment. The objective is to operate the systems and services consistently and cost effectively in order to ensure the delivery of high-quality services to the customer. IS&T introduction is different from implementation in that it is fundamentally about ensuring that the customers' experience in using the changed, improved, amended or new systems is not compromised (Ojiako and Greenwood, 2007). This makes IS&T introduction more challenging to manage because of the subjective nature of customer satisfaction which is largely dependent on individual customer's perception. In effect, the major difference between introduction and implementation is that unlike implementation which focuses on physical installation and execution of plans into test phase or live technical space, introduction is more focused on the supporting customer experience journey (CEJ).

Owing to the complexity of the interactions between the existing systems and new systems being introduced, IS&T introduction techniques and processes to be successful will usually depend on various parameters. These include change management, organisational culture, end-user participation and expectation, political prioritisation and the state of advancement of the technology being employed (Brooke and Maguire, 1998; Maguire, 2000,2002; Ojiako and Greenwood, 2007). Similarly, further attention should be given to the managerial, educational, and communications issues that should accompany IS&T investments. There is an expectation that staff involved with IS&T projects will have a minimum level of information technology competence. Recent research has shown that relative advantage, competitive pressure, and technical resource competence have positive effects on technology adoption. Not surprisingly, these factors are in effect similar to those that need to be considered when managing the implementation of any project. The major difference lies in the fact that IS&T introduction is regarded as a much narrower
process covering activities from the point that the service introduction model is defined to
the point when it is phased out and discontinued. However, it is generally accepted that there is much more to implementation than just technical skills (Brooke and Maguire, 1998). It is interesting that so many organisations allow so-called "experts" to change their organisations when their area of expertise may be limited.

The case study

The perceptions of project failure at introduction stage to be discussed are set in a major service organisation based in the UK. For the purpose of the investigation, we will refer to the organisation as organisation "A".

Organisation "A" is a major UK organisation with a tradition of nearly four centuries of service. It has approximately 200,000 employees, and operates from about 14,000 outlets. With a customer base of about 28 million using its services every week, it is one of the largest service provision companies in the world.

Although the organisation has recently generated profits of over £500 million, it recognises that it faces tough challenges. These challenges include managing its diverse workforce and introducing technology and systems that can support business operations effectively. This may be reflected in a recent spate of industrial action.

Recently, the organisation experienced an unprecedented 30 per cent increase in revenue in its household delivery system (HDS) sector. It was anticipated that there would be a 70 per cent growth in business over five years. There was, therefore, the requirement for a system that would be able to meet an increasing customer base by providing a flexible system for users and customers.

To meet this anticipated demand, the organisation commissioned a new systems integration project. It was expected that target completion would be in two years. A post implementation review (PIR) was planned and project objectives were set out as follows:

- To integrate various management systems into one HDS. It was hoped that achieving this objective would ease the pressure on service bookings.
- To ensure the operational integrity of the major technology that supported the newly integrated HDS system.
- To replace the hardware infrastructure of the systems supporting HDS due to the increase in reported hardware problems.
- The integration was seen as the best means possible to ensure a shorter turn-around time for household deliveries. This was because original estimates pointed out that the existing HDS system took an average of over a day to confirm a customer booking. It was anticipated that with the newly integrated systems, this activity will take less than an hour to complete.
- To meet the identified objectives of the project, two separate systems were envisaged. The first system was a booking system which was developed by organisation A's internal IS&T department. The second system was an operational management system which was developed by a third-party supplier.

The research framework

An independent review had been requested by the project board in addition to one audit and two reviews conducted by an external consulting firm.

The review was required to address three particular points. The first related to whether the development and introduction approach adopted by the project was seen to be suitable. The second related to future development and introduction not hindered or restricted by the present exercise. The final point considered whether guarantees could be offered that the project will have the capacity to support an estimated user population of 60 within the agreed timescale.

An evaluation methodology was used to conduct three major activities. These included a review of the design of the system, a review of the viability of system maintenance and a review of the alignment with business needs. It was important that a broader perspective was taken during the research process. It would have been inappropriate to have taken a narrow, technical focus for use in the interview instrument (Walsham, 1993).

For the purpose of this study, semi-structured interviews were used. This data gathering technique was adopted after consideration of the three basic types of interviewing, their constraints and a review of data collection and analysis. In particular, it was seen as a means of carrying out a non-experimental descriptive research which will demonstrate reality. The approach was also regarded as necessary as it ensured the research captured variations if they emerged and we believed it was relevant for researching a contemporary phenomenon in a real-world context (Yin, 2003).

The interviews were carried out over a six week period. A total of 22 staff were interviewed, while two other staff took part in telephone interviews. The staff interviewed were involved in the project management, development and use of the system. Wherever possible the interviews were attended by internal audit from organisation "A". It must also be stated that the interviews took place during a time of major change in the organisation, and as a result, decisions were made during the time of

the review that may have had a significant effect on people's perceptions of the systems integration project.

The next section identifies fifteen key factors that influenced the eventual breakdown of the systems introduction project. These factors were derived directly from the interviews undertaken in organisation A. This section also provides a summary of the key findings from the case study. From these findings, key observations are also highlighted.

Constantly changing project team

The systems integration project had a large number of different stakeholders interested in its progress. It emerged from the interviewees that there were also several project managers during the life of the project. The majority of the interviewees thought that this may have led to a change of focus, coherence and some breakdown in communication between the various stakeholders.

Project and development methodologies

The systems integration project was not developed using a recognised system development methodology. It however did adopt a broad set of guidelines for systems development. Some interviewees suggested that this could explain deviations from the original specification.

This introduction exercise also appears to have suffered from classic project management problems. The problems included constant additions to the original requirements. This was inevitably a significant factor in the success or otherwise, of the project. One interviewee summed up the project by saying that it had problems because it was, date-driven, finance constrained, lacking in user empathy, and not confident in its use of the chosen IT. There was also a belief in some quarters that the project suffered from a project completion date which might not have been business driven. In effect, this led to suspicion of a mis-alignment between the operations divisions and the project team.

Another interviewee thought that there was an identity crisis for the system in the very early stages. Was it a customer-oriented system; an operational system; or both? This demonstrated that there appeared to be a lack of focus regarding the objectives of the system.

Another issue raised was how the number of suppliers of IS&T consultancy support may have affected the project. There appeared to be tension between the internal and external providers of IS&T support.

Two observations were noted under this parameter. In the first place, effective planning did not appear to have been carried out during implementation. Feedback suggests that more resources should have been put into monitoring the system when it became operational. This would have enabled a decision to back-out from the project and revert back to the previous HDS at a much earlier time. The conclusion from this is that the development design methodology may probably provide a stable platform in future for the introduction of systems into the organisation, but was inappropriate for this particular development.

Risk management and contingency planning

There appeared to be no contingency plan for the project. It appeared, for example, that to consider the possibility of switching back to HDS in the event of failure seemed to have been given little consideration by management. However, several interviewees stated that they understood all the appropriate procedures in relation to risk were undertaken.

A number of staff thought that there was a contingency plan in place even though in hindsight they do not believe that this was adequate. There was a general feeling shared by both project team members and users that it should not have taken several months to realise that the system was not delivering anticipated benefits. In addition, the general view was that because risk and other issues were poorly managed, a lot of fire fighting took place in the first few months of the system's life.

An example of how poorly risk management was managed is demonstrated by the risk process failing to address the possible need to migrate legacy products and services. There was no

consideration of the future requirement to migrate legacy systems and services.

The initial plan was to introduce the system using other risk adverse approaches such as parallel running which is regarded by Avgerou and Cornford (1988) as perhaps the safest method, or by modular implementation which Saeki and Watanabe (1999) regard as a cautious approach. This approach involved extending incrementally in manageable steps over a period of time the capabilities of the new system. Instead a decision was made to pilot the system across two major sales centres. It was fortunate that the sales centres, at this stage, could revert back to using HDS. This had repercussions for the overall testing of systems as it became clear that the acceptance testing was not robust enough to ensure that the system actually delivered benefits for users.

Systems design

The initial recommendation of the internal IS&T department was for a mainframe system. A few of the interviewees suggested that the final decision for the project design was taken away from the IS&T staff. This was particularly relevant as sales centre staff they expressed the view that what they needed to have to do their jobs was a transaction-oriented system that supported lots of users and was able to meet two major objectives. The first was an ability to build and manage queues, and the second was an ability to manage complex business transactions.

Several interviewees thought that the development team only knew the basic requirements of the project.

Feedback from some of the interviewees suggested that the system did in fact meet its functional requirements but may have failed to deliver in other areas. There was also significant concern about the lack of analysis undertaken in the various business areas. For example, it emerged that different sales centres had different booking systems and this should have been identified at the analysis stage. The inability to build this requirement into the design resulted in a system that was inflexible for the users and customers.

Several interviewees who were also users of the system believed that they had no input into the design process. It was also not clear to quite a lot of the interviewees what to expect from the new system.

A number of interviewees who worked as sales centre staff believe that HDS was basically a good system and although several of the screen designs were not regarded as particularly friendly, a number of interviewees felt comfortable with the system. Not surprisingly some of the interviewees felt that the system could be made more user friendly.

The general feeling was that the previous system was relatively old but it worked. In some sales centres there were up to four terminals dedicated to HDS. This led to an improvement in operational flexibility for the staff.

It was observed from the case that too much development effort had been put into system enhancements at the expense of ensuring the integrity of a system that was capable of performing core tasks. The developers needed to have a clear understanding of what parts of the system could be enhanced by use of a computer and those that would be better left alone. The user-customer interface was seen as crucial for the success of the new system.

Systems capabilities

A significant percentage of staff pointed out that the system simply did not work as originally intended. There were disagreements about the limitations placed on the project by the platform that was chosen.

Six of the interviewees pointed out that the project was put forward as an all-singing all-dancing system. In effect, although the system was championed as a highly user-friendly flexible system capable of multi-tasking, in reality its capabilities were poor and as a result, it failed to meet initial user expectations. Three examples can be mentioned. The first related to the fact that the newly introduced system kept on crashing with less than ten users using the system. The second related to problems with response times of between one and two hours when processing orders or enquiries. Some interviewees also suggested that there were many enhancements to the

project without necessarily providing any improvements. The system indicated it was fully booked

when up to 50 per cent of capacity was still available.

Another problem related to difficulty with managing batch processing during normal working hours at the sales centres. This had to be scheduled outside working hours to ensure that only one set of data were available. However, it became clear that with a strong web-based customer focus, it was quite difficult to schedule a time for batch processing as in theory, orders could be placed at all times making the scheduling of the downtime on the system quite difficult.

A major concern with the capabilities of the system was that due to a combination of factors, the system was not as flexible and robust as would have been expected. For example, although the project was supported by a strong business case, it was however based on a lot of unsubstantiated assumptions. These assumptions included:

- an assumption about the probable success of the system;
- assumptions on technology and equipment supplier selection;
- assumptions that compensation payments (if required) had been firmed up and agreed by all divisions and included in budgets;
- assumptions that all systems development costs had been included in budgets; and
- an assumption that training requirements had been fully identified and would be provided on a need to know basis rather than widespread blanket training.

The effect of this was two fold. In the first place, in order to ensure that a clear and unambiguous plan was created and that all involved in the introduction programme were working to the same plan, the planning of the programme was temporarily put on hold while a common set of assumptions was agreed upon. Secondly, it became apparent that there was a need to scale down business requirements because it was unlikely that the system would be capable of running a high number of concurrent transactions to timescales originally set out during requirements planning. The scaling down of capabilities led to major concerns about whether the project had the capability to deliver benefits in an organisational context.

Systems testing

A significant amount of volumetric and acceptance testing had taken place and some assurances were given about the capacity limits surrounding systems. Unfortunately, the data available were incorrect as it had earlier been pointed out that certain parts of the business were working with incorrect volumetric data. As a result, a number of the interviewees were under the impression that satisfactory performance testing had taken place. There was however even less certainty about the amount of integration testing that had taken place to underpin the system.

There was significant evidence that systems had not been tested sufficiently at an operational level especially as it emerged that this had only been undertaken with a very limited number of users.

The lack of rigour in testing gave a false impression that the system was robust. The test window was also extremely short considering the volume and variety of products, services and equipment to be tested. Feedback suggested that more time should have been spent investigating the volumetrics surrounding the system.

It also became apparent that there was no clear process for agreeing successful criteria for these tests. This contributed largely to the view shared by a majority of the interviewees that considering the problems with the testing, the decision to revert back to HDS should have been taken earlier.

Interfacing with other systems

A majority of interviewees believed that newly introduced systems would be integrated with other systems. For example, finance staff were under the impression that the new systems would interface with other accounting systems still in operation.

The new system was eventually introduced without any capability to interface with the majority of previously existing systems. The expected functionality was withdrawn so as to reduce the

complexity of the system. Initially, appeared that other interface enhancements which were proposed were not developed for financial reasons.

Data integrity

It was generally accepted that for the project to be successful the accuracy of its data were crucial, although several staff affirmed that security issues were not as critical. Some of the other interviewees suggested that they were satisfied with the security of the system. The development team were working with a platform that contains a significant number of known problems. The impact on accuracy of data were not fully assessed for risk.

Technology

Initially, the chosen technology did not appear to be an unreasonable platform on which to base such a system. It was originally planned that the new system would support up to 60 users. This number was however scaled down to 32 when it became clear that the capabilities of the system had been over-estimated. Overall, most of the interviewees were of the view that the system was too complex and would result in too much effort being expended to make the system operational.

The major observation however was that the multitasking capabilities of the chosen platform were not fully incorporated within the project. This resulted in the system being unable to cope with the added sophistication built into it, leading to a number of significant application problems when the system went live.

User expectations

The expectations of users were very high and in a number of cases these were passed on to customers. Expectations were very high due to the positive promotion of the system's capabilities by executives and management. Management also ensured that in the run up to its launch, employees in the sales centre promoted the benefits of the new system to customers. There was some user involvement at all stages of the introduction. However, there was feedback to suggest that this was involvement of a limited nature, i.e. the user group met bi-monthly.

The system failed to meet user expectations due to various reasons. This included the system's inability to give users the type of information that would add value to the service they were giving to customers. The system's documentation was also rather confusing. There were also problems with functionality and slow response times during order generation and queries.

There was a general feeling that it will take a lot of effort to win back the confidence of users towards the system. The internal perception of the overall system was generally poor. To explore factors dealing with user expectation, two specific areas are discussed. These were the lack of a customer experience strategy and the provision of service. The very fact that this system interlinked directly to companies meant that customers were an extension of users.

Lack of a viable customer experience strategy

It was necessary as part of the introduction to ensure that the experience of customers was not adversely impacted by the implementation, or following the initial failure of the introduction project, its withdrawal.

The existence of a customer experience management process should have provided a means of ensuring that all aspects of the customer experience are fully considered (Table I). At the same time, it would have ensured that the system development was able to call on detailed sets of requirements for each stage of the process.

What was lacking in the project was an indication that the systems integration project was able to capture detailed sets of requirements for each stage of the process, in effect, a proposition and design process that ensures that customer experience and needs are designed in from concept through to launch, including the development of relevant marketing collateral for use with identified customer segments.

Lack of a viable user experience strategy

One key factor which emerged was the possible lack of a consolidated and defined user experience strategy across the whole organisation. This situation meant that it was difficult to confirm the existence of a single concept2launch user experience process.

There is however no evidence from the interviewees that this occurred.

Other initiatives that were possibly missing due to the lack of a customer/user experience strategy included the following:

- The availability of a complete set of data profiles for users. The lack of this data meant that the organisation was unable to generate information that was able to support pro-active contact of users.
- A clear view on the impact of the new system on existing operational processes within the organisation. It should have been realised earlier on in the programme that procedures and processes will require changes to accommodate requirements from the project. The source information required to understand and develop these changes appeared either late or missing.
- Implementation of a framework of processes and systems which enables all users to complete their requirements through a simple and straightforward interaction seemed to be unavailable.
- It is also important to highlight that the initial set of standard service wraps need to be built from existing capabilities. However, these will be defined in common and consistent terms for all new product launches. The service wraps themselves will also need to evolve and develop in line with changing user needs.
- A coherent and well understood set of measures that would have enabled operational teams and senior management to understand performance against user expectations and business goals and identify actions needed to improve performance.

Parameter	Definitions	Expected measurement	What went wrong
Propositions requirements management	At the front-end, the requirements management team should be working with the business stakeholders to identify and evaluate requirements	Requirements management will be successful when there is a direct linkage to the solution designers who can inform of what is possible. It also involves ensuring that in-life support requirements are adequately addressed to support the new and changed services In order to understand the requirements management operating model, it is necessary to appreciate the various sources of requirements, the nature of these requirements and the way in which these requirements are "funnelled" to the appropriate analysts and designers to define the solution	The organisation adopted a "big-bang" approach. Unfortunately, the effect was that the organisation never really had the time to stop to either reflect on progress or accommodate implementation and systems introduction related problems
Products, systems and services test programme	The objective of this programme will be to test and prove points of interconnection and interoperability between the customers, existing platforms and proposed products, systems and services	The test programme should include for example testing for all migrated products that will be operational. The testing could include replication of typical product launch testing and the testing of products against all relevant customer types and associated pricing packages For the test programme to be successful, success criteria must be agreed. This could include for example, customers will suffer minimal disruption during the introduction or withdrawal phase of the project. In addition, it is essential that the customer experience is no worse than currently	The delivery platform was never stable. This led to major disruptions and a major deterioration in service over months

(continued)

Table I.

Parameter	Definitions	Expected measurement	What went wrong
Products, systems and services withdrawal programme	Involves ensuring that that all products, systems and services that are to be discontinued are successfully decommissioned from existing technical space or environment without any adverse impact on either systems and services that will not be discontinued, or the products, systems and services that will be introduced	It should be noted that product withdrawals are in some ways more labour intensive than product introduction especially in the area of customer communication	Apart from the fact that the delivery platform was never stable, there did not appear to exist any clear inventory of current systems within the organisation. in service over months
Products, systems and services introduction	Involves ensuring that that new and changed products, systems and services are successfully introduced into an existing technical space or environment without any adverse impact on already existing systems and services	For Products, Systems and Services Introduction to be successful, it is essential that the stability of existing systems and services are maintained and that there is minimal impact on service outputs of existing services	Although this parameter was not fully investigated, there it appeared detrimental on existing systems
Awareness and training	May take the form of marketing or advertising directed at both employees and customers	Organisation successfully ensures that it is able to provide information about product propositions to customers	Uncertainity of the implementation meant that the project team looked inwards and not outwards. In terms of training, training was provided at the wrong time, to the wrong people at the wrong level
Enquiry	This might be through customer relationship managers or by contacting sales teams	Customer is expected to initiate contact with organisation A following the awareness campaign	This parameter was not fully investigated
Purchase	This might be through customer relationship managers or by contacting sales teams	Customer places a firm order	There was a failure to clarify whether customers were internal users of the system or "external" customers who purchase the organisations products and services
Order management	Involves the process of translating customer requirements into a firm order, monitoring progress and keeping the customer informed	A customer's request is successfully translated into a firm order within an acceptable timescale and to a level of service pre-determined and articulated and agreed in the service level agreement	There was a general lack of vision from the organisation. With a poorly operational order management system, customers (external) looking to purchase the organisations products and services were directed to the organisations competitors

(*continued*)

Parameter	Definitions	Expected measurement	What went wrong
Setup	The process of fulfilling the requirements of the customers' order	A customer's order is successfully fulfilled within an acceptable timescale and to a level of service pre-determined and articulated and agreed in the service level agreement	This parameter was not fully investigated
Usage	Customers' initial and ongoing experience of using the product or service provided	Customer satisfaction survey within an acceptable threshold. There is increase in customer contacts	This parameter was not fully investigated
Billing	This is the initial and subsequent cycle of bills in relation to the products and services purchased	Customer billing are user friendly and also meets all quality criteria	This parameter was not fully investigated
In-life service (and service provision)	This is the ongoing service management of the customers' products and services	At the front-end, the service management team should be working with the business stakeholders to ensure that customers support opportunities and evaluate requirements. However, this can only be done effectively if there is a direct linkage to the solution designers who can inform of what is possible. The added advantage of this relationship is that any concurrent design work underway within the end to end design community can be informed by the evolving requirements This relationship also encourages continued close working within the design community and thereby the evolution of a coherent and holistic end to end design. It also creates a closer tie with the business stakeholders – necessary for rapid development and onward hot-housing	This parameter was not fully investigated
Customer (user) management	This is the ongoing management of the customer (user) relationship	It includes an in-depth understanding of customer needs and appropriate product and service recommendations	The organisations reaction had been to look at the simple numbers in terms of increase in customer contact. No major analysis to understand whether this resulted in a resolution of queries from the customers (users)

Service provision

Service provision for users was considered a major area of interest in terms of the initial failure of the implementation. The expectation was that a standard service provision framework would be in place to meet user's baseline requirements. It was expected that this was to be provided to make available a greater degree of customisation to meet any additional requirements a specific customer might have.

Unfortunately, no evidence seems to emerge that any form of defined service wraps were in existence. This should have provided an opportunity to differentiate between the levels of sophistication involved in any custom service for customers against the cost from a basic, self-service, low-cost option. As the project was primarily being championed as a system with multi-tasking capabilities, no major service provision capabilities were built into the requirements. As it became clear that the system had limitations in terms of capabilities, the expectation was that a set of parameters would have been established in the short-term in order to specify systems limitations. No evidence exists that this took place, although the longer-term aspiration however, should be to eliminate the need for these parameters thus providing truly universal service capabilities. It is important also to stress that differentiation to customers will need to be supported by common processes and systems across Organisation A, which again the new systems seemed unable to support.

Migration readiness criteria

It would have been important to address quite early in the introduction exercise whether the organisation had the capability to address concerns about the adverse impact of the exercise on customers. For this to be addressed, a number of milestone criteria should have been identified and addressed. These milestones and criteria are articulated in Tables II and III.

Criteria	Measurement
Roles and functions	Service management and user relationship management functions in place and end-user community notification completed. Unfortunately, within this project, there were not enough customer centre staff on the project team
Contracts	Contractual and commercial agreement with user representatives in place
Success criteria	Understand and agree success criteria. Will also include agreeing across the board proceed or not to proceed dates for planning, agreeing a criteria for proceed or not to proceed and agreeing a decision framework for proceed/not to proceed
Costing	All costs identified
Introduction strategy	Procedure for product, systems and services introduction agreed
Infrastructure	Appropriate technology and infrastructure available. Stability and scalability of appropriate technology and functionality to support the products subject to new systems migration. It appeared that the organisation did not see this parameter as key to its strategy
Testing	Exhaustive testing of product, systems and services migration completed. This was however not fully achieved due to platform instability
Migration	Product, systems and services migration completed
SLA's	All service level agreement's are in place
Sign-off	User community representatives agreement to proceed. Could be in form of user relationship manager's within the organisation

Table II.
Major migration readiness criteria

Criteria	Measurement
Introduction	Completion of migration within published timescales Roll-back/contingency plans not invoked Reported faults related/driven by the migration are at an acceptable threshold pre-determined and articulated in the service level agreement Related faults related/driven by the migration are cleared (fixed) within an acceptable timescale pre-determined and articulated in the service level agreement
Project management	Project manager successfully appointed Project management team in place. Full training (if required), provided Information flow list of contacts and escalation process in place and working Agreed contingency plans in place and effective when invoked
The customer experience	Customer satisfaction/dissatisfaction determines that key performance indicators are not impacted The customer is clear about what to expect and the introduction occurs in the way the customer expects There are no serious incidents caused by the introduction exercise There is no loss of service outside of expected agreed targets All products and facilities continue to operate without change There is no reduction in the level of operational performance during the lifecycle of this project, where the reduction can be attributed to the introduction exercise
Post introduction review	The feedback from customers is reviewed against benchmarks Processes are updated with lessons learnt and action plans defined

Table III.
Criteria for determining the success of the introduction

In Table II, all parameters which would have needed to be addressed in order to confirm that new systems were ready for migration are identified. Table III, on the other hand shows what criteria the entire systems integration project would have needed to meet, in order to be determined as a successful introduction exercise.

It is important to highlight that the success of the project would have had the potential to be either directly or indirectly affected by some element of the actual introduction exercise.

Training and people

The training took place a few weeks before the system went live. Some of the feedback suggested serious misgivings about the training. Several interviewees suggested that the training was provided in an air of intimidation. For example, staff who asked questions were taken to one side and told not to disruptive. Other staff believed that the training had been well received.

Overall, there was a major disparity in the feedback on the training for use of the new systems. This ranged from the training programme being successful to it being useless. Some interviewees refused to comment on the quality of the training process.

The relationship between the technical staff and sales advisers was crucial. Working together, they were able to alleviate some of the problems faced by customers when the new systems became operational. This relationship was further demonstrated when management finally made the decision to revert back to HDS in the short term.

Conclusions

This paper represents the output of a review on the problematical implementation of a new system into a major service-oriented organisation. The parameters discussed are not an exhaustive list, but one that we see as important in the context of the failure of the introduction project. The failure was driven by a number of factors, including poor project management and a poor understanding of how systems work. From the earlier mentioned PIR, it emerged that the project failed due to the following reasons (Table IV) which we have linked to the initial project objectives.

One of the key parameters identified in this paper is the need to bring the customer's experience to the forefront of management attention. This change means that in the future, a clear framework to support the CEJ needs to be well thought out before a major systems introduction project commences.

Overall, the introduction of the new system into organisation A was within weeks failing to meet project aims. It was generally expressed in the sales centres that the decision to revert back to HDS should have been taken much earlier. This system was "rolled-out" nationwide, and it, therefore, had the ability to transform the organisation. Previously, new system developments had the ability to change business processes, transform the nature of work, affect the morale of employees, and the interactions of staff within firms. Increasingly, the tighter coupling between organisations and customers with regard to IS&T has resulted in the potential for swift increases in market share. However, the stakes are also higher if things go wrong as there will be negative reactions towards any firms that fail to provide a continuous level of customer service. It was imperative that organisation A had a customer experience strategy in place. The organisation was able to learn expensive lessons from the implementation, especially following the loss of some of their customers to competitors.

Parameter	Project aim	Reason for failure
Systems integration	To integrate various management systems into one HDS. It was hoped that achieving this objective will ease the pressure on service bookings	Project management methodology adopted was inappropriate
Operational integrity	To ensure the operational integrity of the Major technology that supported the newly integrated HDS system	The organisation's intention ended up being to simply add the new systems onto its growing portfolio
Hardware replacement	To replace the hardware infrastructure of the systems supporting HDS due to the increase in reported hardware problems	The organisations approach was to have about 60 of their customer contract staff working on the new systems simultaneously. The result of resource constraints was that the testing regime adopted was neither rigorous nor complete

Table IV.
Major reasons for project Failure

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Further reading

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